



NASA's Dawn Mission: *Find a Meteorite* Pilot Study in Informal Education Settings

Introduction

In 2007, NASA's Dawn mission will begin its trek to investigate Ceres and Vesta, two of the largest protoplanets remaining intact since their formations. The mission will address the role of size and water in determining the evolution of the planets by measuring their mass, shape, volume, and spin rate with imagery, laser altimetry, and gravity. Through this investigation, scientists aim to characterize the conditions and processes of the solar system's earliest epoch.¹

The Education and Public Outreach (E/PO) for the Dawn mission consists of a national team of E/PO specialists from the University of Maryland, New Roads Schools in California, and Mid-continent Research for Education and Learning (McREL). In support of the Dawn mission, this team develops and disseminates high quality resources and materials that reflect "best practices" in education. As such, Dawn E/PO curriculum materials are standards-driven, pedagogically appropriate, and designed to meet the needs of all students, including disadvantaged and underserved. Through their educational resources and materials, the Dawn E/PO team aims to improve students' understanding of the formation of the solar system, interest in solar-system science, and opportunities to conduct science within real-life contexts. The Dawn E/PO effort also intends to help science educators gain a better understanding of how to implement inquiry processes that lead to improved practices.

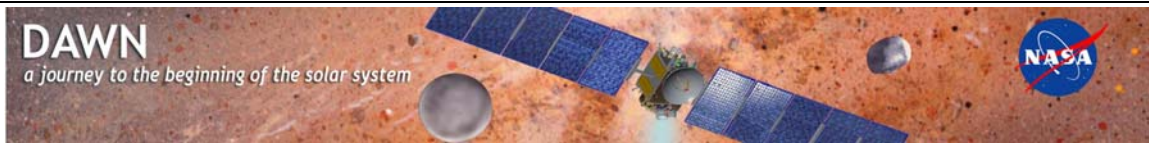
***Find A Meteorite* Description**

The *Find a Meteorite* activity introduces the importance of meteorites to the understanding of the origin of the solar system. Since scientists believe that some meteorites are pieces of the asteroid Vesta, they may be very old remnants of the solar system in its earliest stages. The activity provides information and insight that allows participants to share scientists' expectations, based on meteoritic samples, of what we will find when the NASA's Dawn Mission visits Vesta and Ceres. Comparison between actual data and the meteorites here on earth may confirm that we are in possession of very valuable material indeed. The hands-on activity is an introduction to meteorite identification that aims to help learners differentiate between meteorites and terrestrial rocks. Students as young as 10 will find the exercise interesting. The Web-based activity <http://dawn.jpl.nasa.gov/Meteorite/index.asp> is a simplified version of the hands-on activity, and can be used to augment the hands-on activity.

Pilot Study Purpose

The purpose of this pilot study is to ensure that the Dawn E/PO curriculum materials are effective, of high quality and utility, and reflect the needs of informal science educators. This study will allow the Dawn E/PO team to pilot-test the *Find a Meteorite* activity and identify any content, implementation, or design issues that will guide material modifications for a final product that Dawn E/PO will broadly disseminate to educators throughout the country. The study focuses on educators' experiences with and perceptions of the activity as well as students' interests and learning.

¹ Dawn: A Journey to the Beginning of the Solar System (2002). The online site for the Dawn mission. Retrieved from the World Wide Web, June 5, 2003, <http://www-ssc.igpp.ucla.edu/dawn/>.



Design

Informal educators that work with middle-school students and other members of the general public are being recruited for this pilot study. Pilot-test participants will use the *Find a Meteorite* activity according to specified implementation guidelines and will complete the data collection instruments. The following data collection methods will be employed for the pilot study:

- * Participant feedback form (available in print and online)
- * Educator implementation survey (available in print and online)
- * Educator follow-up interview debrief

In recognition of their participation, educators will receive designation as a NASA E/PO Field Associate. No participant or educator names will be used in reporting. All data will be reported in aggregated form, and no individual participant data will be reported.

Contact Information

For information regarding the field study contact:

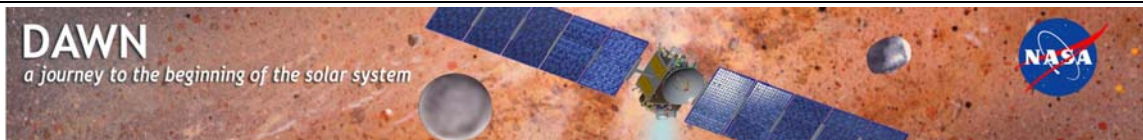
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For information regarding Dawn E/PO materials and resources contact:

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FAX

LETTER OF INTEREST FOR THE Dawn E/PO Pilot TEST

TO: McREL E/PO Site Recruitment c/o Dawn Fries

FAX #: 800.337.3005

DATE: _____

FROM: _____

ORGANIZATION: _____

PHONE: _____

ADDRESS: _____

EMAIL: _____

Dear McREL E/PO:

We are very interested in participating in a pilot test of the Dawn E/PO supplemental science materials. We look forward to working closely with Mid-Continent Research for Education & Learning (McREL) and the Dawn E/PO team to determine whether our site will be one of the final sites chosen to participate in this study.

Sincerely,

Please answer the following questions:

1. With how many participants do you foresee using the FAM activity? _____
2. With what audience would you use the activity?
____ middle school-aged children ____ amateur astronomers
____ general public members ____ other _____
3. Given your target audience and venue, would you implement the activity one time or multiple times? ____ Once ____ Multiple times
4. In what setting would you deliver the activity?
____ afterschool program ____ youth organization/club
____ science center/museum outreach program
____ other (please describe) _____